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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,676	09/23/2003	Roman C. Gutierrez	M-15571 US	1414

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EXAMINER	
MARTINEZ, JOSEPH P	
ART UNIT	**PAPER NUMBER**
2873	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,676	GUTIERREZ ET AL.	
	Examiner	Art Unit	
	Joseph P. Martinez	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-20* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Raguin et al. (6587618).

Re claim 1, Raguin et al. teaches for example in fig. 1C and 7, an optical fiber (11) having an angled distal end (labeled "ANGLED" in fig. 7); a ferrule (12) having an angled end face (labeled "ANGLED" in fig. 7), wherein an end portion of the optical fiber is inserted in the ferrule (col. 7, ln. 25-27); and a plano-convex lens (10, wherein the office interprets the front side 10B to disclose the convex portion and the backside 10C to disclose the planar side) having a planar surface (10C) attached (via 14) to the angled distal end (angled portion of 12) of the ferrule, the plano-convex collimating lens collimating (col. 7, ln. 14-16) a beam of light from the optical fiber (col. 7, ln. 40-42), wherein the planar surface (10C) is parallel to the plane of the convex lens surface (fig. 7).

Re claim 2, Raguin et al. further teaches for example, the optical fiber is glued to the ferrule (col. 7, ln. 25-27, wherein the office interprets holding the fiber in the ferrule to include gluing the ferrule in the fiber as is well known in the art).

Re claim 3, Raguin et al. further teaches in fig. 2, the plano-convex lens is attached to the ferrule by a low viscosity, ultraviolet-curing adhesive (14, col. 61-64).

Re claim 6, Raguin et al. further teaches in fig. 2, an angle of the beam of light exiting the optical fiber is substantially equal to an angle of the beam of light exiting the plano-convex lens (19, wherein the optical axis stays constant).

Re claim 7, Raguin et al. further teaches for example, an anti-reflection layer on the planar surface of the lens (col. 13, ln. 25-26).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raguin et al. (6587618).

Re claims 8 and 19, Raguin et al. teaches in fig. 2, 7 and 10, a method of collimating an optical beam comprising: providing a planar, angled fiber termination or an array of angle polished fiber terminations (12); providing a plano-convex lens (10, wherein the office interprets

the front side 10B to disclose the convex portion and the backside 10C to disclose the planar side) having a planar surface (10C) and a convex surface (on side 10B), the planar surface parallel to the plane of the convex surface (fig. 7); placing the planar surface of the plano-convex lens over the planar, angled fiber termination (angled portion of 12) such that there is a gap (col. 7, ln. 65) between a planar side of the lens (10c) and a fiber end face (angled portion of 12); adjusting a lateral position of the lens parallel to a plane of a lens-fiber surface to achieve a desired pointing angle for a collimated light beam exiting the lens (col. 10, ln. 49-62); and fixing the lateral position of the lens with respect to the planar, angled fiber termination (col. 11, ln. 3-8).

But, Raguin et al. fails to explicitly teach the gap is about 10 microns or less.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the gap between a planar side of the lens and a fiber end face be about 10 microns or less, since it has been held where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re *Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Raguin et al. to make the gap be about 10 microns or less in order to prevent back-reflections.

Re claim 20, Raguin et al. teach in figs. 2, 7 and 14, a method of collimating an optical beam comprising: providing an array of plano-convex lenses (10); wherein the plano-convex lenses (10, wherein the office interprets the front side 10B to disclose the convex portion and the

backside 10C to disclose the planar side) have a planar surfaces (10C) and convex surfaces (on side 10B), wherein the planar surface parallel to the plane of the convex surface (fig. 7); placing an angle polished fiber termination (1219) under one of the plano-convex lenses such that there is a gap (col. 7, ln. 65) between a planar side of the lens (10c) and a fiber end face (angled portion of 12); adjusting a lateral position of the fiber termination parallel to a plane of the lens-fiber surface to achieve a desired pointing angle for a light beam exiting the lens (col. 10, ln. 49-62); and fixing a position of the fiber termination (col. 11, ln. 3-8).

But, Raguin et al. fails to explicitly teach the gap is about 10 microns or less.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the gap between a planar side of the lens and a fiber end face be about 10 microns or less, since it has been held where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re *Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Raguin et al. to make the gap be about 10 microns or less in order to prevent back-reflections.

Re claims 9-11, 15 and 18, Raguin et al. further teach in fig. 10, laterally aligning the plano-convex lens transverse to a fiber axis and with respect to the fiber end face to reduce optical aberrations in the collimated beam exiting the lens (col. 10, ln. 49-62), further comprising minimizing either spherical or comatic aberrations (col. 14, ln. 49-64, wherein the office interprets aberrations as taught by Raguin et al. to include all types of optical aberrations).

Re claim 12, Raguin et al. further teach, coating an anti-reflection layer on the planar surface of the lens (col. 13, ln. 25-26).

Re claim 13, Raguin et al. further teach in fig. 7, filling entirely the gap between the fiber termination and the planar surface of the lens with a transparent material (14).

Re claim 14, Raguin et al. further teach in fig. 14, moving a lens with at least one actuator with respect to the fiber termination (via computer controlled 1225).

Re claim 16, Raguin et al. further teach for example, adjusting the gap between the fiber termination and the lens to modify a wavelength dependence of transmission and reflection (col. 18, ln. 11-14, wherein the office interprets aligning with the same or similar light to be used to teach the claimed limitations).

Re claim 17, Raguin et al. further teach for example in fig. 10, adjusting the lateral position of the lens with respect to the fiber termination to change a pointing angle of the collimated beam (col. 10, ln. 49-62).

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raguin et al. (6587618) in view of Kanazawa (6179483).

Re claim 5, Raguin et al. teaches the collimator as disclosed above.

But, Raguin et al. fails to explicitly teach comprising a substrate with an angled hole shaped to fit the ferrule, the ferrule being inserted in the hole.

However, within the same field of endeavor, Kanazawa teaches in fig. 1, a substrate with an angled hole (18) shaped to fit the ferrule, the ferrule (19) being inserted in the hole.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Chang in view of Raguin et al. with the substrate with an angled hole of Kanazawa in order to support the ferrule as taught by Kanazawa.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art taken alone or in combination fails to anticipate or fairly suggest the limitations of the claims, in such a manner that a rejection under 35 USC 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in dependent claim 4.

Specifically regarding claim 4, Raguin et al. teaches the state of the art of a collimator, including a collimator lens, a ferrule and a fiber.

But, Raguin et al. fails to explicitly teach an air gap between the planar surface of the lens and a fiber face is about 10 microns or less, as claimed.

Response to Arguments

Applicant's arguments with respect to claims 1-3 and 5-20 have been considered but are moot in view of the new ground(s) of rejection.

Re applicant's arguments on p. 7-10, wherein the applicant argues that Raguin et al. does not disclose a planar surface of the lens is attached to an angled ferrule, have been considered, but are not persuasive. The office interprets fig. 7, more specifically the portion of fig. 7 labeled ANGLED, to disclose a planar surface (10C) of the lens (10) is attached to an angled ferrule (12).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
11-29-04

Hung Xuan Dang
Primary Examiner